LOUISIANA DEPARTMENT OF EDUCATION

Academic Content

Instructional Materials Evaluation Tool

(IMET) for Alignment in Science Grades K-12 Full Curriculum

Strong science instruction requires that students:

- Apply content knowledge to explain real world phenomena and to design solutions,
- Investigate, evaluate, and reason scientifically, and
- Connect ideas across disciplines.

Title: **iCEV Louisiana Physical Science**

Grade/Course: **Physical Science**

Publisher: **CEV Multimedia LLC**

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Overall Rating: **Tier 3, Not representing quality**

Tier 1, Tier 2, Tier 3 Elements of this review:

STRONG	WEAK
	1. Three-dimensional Learning (Non-Negotiable)
	2. Phenomenon-Based Instruction (Non-Negotiable)

To evaluate instructional materials for alignment with the standards and determine tiered rating, begin with **Section I: Non-Negotiable Criteria**.

- Review the **required**[1] Indicators of Superior Quality for each **Non-Negotiable** criterion.
- If there is a "Yes" for all **required** Indicators of Superior Quality, materials receive a "Yes" for that **Non-Negotiable** criterion.
- If there is a "No" for any of the **required** Indicators of Superior Quality, materials receive a "No" for that **Non-Negotiable** criterion.
- Materials must meet **Non-Negotiable** Criteria 1 and 2 for the review to continue to **Non-Negotiable** Criteria 3 and 4. Materials must meet all of the **Non-Negotiable** Criteria 1-4 in order for the review to continue to Section II.
- If materials receive a "No" for any **Non-Negotiable** criterion, a rating of Tier 3 is assigned, and the review does not continue.

If all Non-Negotiable Criteria are met, then continue to **Section II: Additional Criteria of Superior Quality**.

- Review the **required** Indicators of Superior Quality for each criterion.
- If there is a "Yes" for all **required** Indicators of Superior Quality, then the materials receive a "Yes" for the additional criteria.
- If there is a "No" for any **required** Indicator of Superior Quality, then the materials receive a "No" for the additional criteria.

Tier 1 ratings receive a "Yes" for all Non-Negotiable Criteria and a "Yes" for each of the Additional Criteria of Superior Quality.

Tier 2 ratings receive a "Yes" for all Non-Negotiable Criteria, but at least one "No" for the Additional Criteria of Superior Quality.

Tier 3 ratings receive a "No" for at least one of the Non-Negotiable Criteria.

[1] **Required Indicators of Superior Quality** are labeled "**Required**" and shaded light orange. Remaining indicators that are shaded white are included to provide additional information to aid in material selection and do not affect tiered rating.

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
SECTION I: NON-NEGOTIABLE CRITERIA OF SUPERIOR QUALITY Materials must meet Non-Negotiable Criteria 1 and 2 for the review to continue to Non-Negotiable Criteria 3 and 4. Materials must meet all of the Non-Negotiable Criteria 1-4 in order for the review to continue to Section II.			
Non-Negotiable **1. THREE-DIMENSIONAL LEARNING:** Students have multiple opportunities throughout each unit to develop an understanding and demonstrate application of the three dimensions. ☐ Yes ☒ No	**Required** **1a)** Materials are designed so that students develop scientific content knowledge and scientific skills through **interacting with the three dimensions** of the science standards. The majority of the materials **engage students** in integrating the science and engineering practices (SEP), crosscutting concepts (CCC), and disciplinary core ideas (DCI) to support deeper learning.	**No**	The instructional materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards. The majority of the materials do not engage students in integrating the science and engineering practices (SEP), crosscutting concepts (CCC), and disciplinary core ideas (DCI) to support deeper learning. While the lessons attempt to incorporate the three dimensions, students are not required to engage in them in order to develop scientific knowledge. Each lesson contains a slide show to present the content of the lesson. Most of the science content is presented to students before students engage in activities. The platform includes Interactive Assignments with each slide show; however, most of the activities are one dimensional, and students can complete the lessons without engaging in these activities. At the start of each lesson, students receive an Action Plan, a Vocabulary Handout, and a Key Concepts document. The Vocabulary Handout includes key terms and definitions used in the lesson. The Key Concept document is a skeleton outline of concepts presented in the lesson. Students fill in the

CRITERIA	INDICATORS OF SUPERIOR QUALITY	MEETS METRICS (YES/NO)	JUSTIFICATION/COMMENTS WITH EXAMPLES
			blanks as they work through the slide show. Rather than developing science content knowledge through SEPs and CCCs, students often follow the structure of reading content or watching videos in a slide show and then completing the activities. For example, in Chemistry Basics: Periodic Table Lessons, students read through science content presented on a slide deck describing atomic structure (DCI, HS.PS1A.a) and the organization of the periodic table (DCI, HS.PS1.A.b) with little to no engagement in SEPs or CCCs. This first segment of the lesson is 19 slides long. Slides 12-13 present Bohr Models of two elements and then ask students to turn to a partner and discuss the differences, which is then presented on the next slide. On Slide 15, students practice creating Bohr Models of other elements; however, they do not need to engage in modeling to make sense of information or phenomena. The students do not use models to predict unknowns. They do not revise their models based on data or peer discussion. The models are not used to develop an understanding of the relationship between atomic structure and reactivity. Instead, the models are provided to the students and explained. Students only complete models for practice and reinforcement of skills acquired by reading slide decks. Similarly, the patterns inherent in the periodic table are not developed by the students, but are described to students

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			on Slides 46-70. Students are not expected to notice and apply these patterns on their own. In Magnetic and Electrical Force Lessons, students watch a video describing magnetism, electrical forces, and their interaction (DCI, HS.PS2B.b). Then, they practice calculating coulombic forces between charged objects using the equation presented in the video during the Calculating with Coulomb Activity. Finally, students provide evidence for the relationship between electrical currents and magnetic fields in the Electro-Magnetic Experiments. The activity serves as a confirmation lab rather than an exploratory or sense-making investigation since the relationship was already described in the video that opened the lesson. In the Nuclear Force lessons, Interactive Assignments, Modeling Half-Life, students participate in a coin-flip simulation of radioactive decay; however, the activity does not explicitly require students to develop or use a model or to explain patterns based on data. Instead, students follow procedural steps without engaging in deeper analysis or reflecting on how the model represents nuclear processes (DCI, HS-PS1.C, Nuclear Processes). In Chemistry Basics: Chemical Reactions Lessons, Interactive Assignments, Chemical Reaction Mini-Lab, students conduct an experiment in which they put an Alka-Seltzer tablet in water, measuring the mass of the water and the

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			tablet before and after the reaction. Students use the collected data to support the law of conservation of mass. The ideas that atoms are conserved in a chemical reaction and that the chemical properties of the elements involved can be used to describe and predict chemical reactions (DCI, HS-PS.1B.c) are only partially addressed since students do not discuss the chemical properties of the water or the sodium bicarbonate. The chemical properties of the elements are not used to describe or predict the chemical reaction. While this lab incorporates elements of the three dimensions, students do not authentically develop scientific knowledge or skills during the investigation because all relevant disciplinary content, such as conservation of mass, reaction types, periodic trends, Bohr and Lewis models, is delivered prior to the lab in the form of direct instruction. Because the content was provided first, their task is to verify rather than discover or construct understanding through investigation. This structure limits opportunities for students to engage in the authentic use of SEPs, such as planning investigations, constructing explanations, or revising models based on evidence. Moreover, the integration of the three dimensions does not occur consistently throughout the lesson. Students engage primarily with DCIs in the first and second classes of the lesson, often through slide

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			show presentations, vocabulary handouts, and procedural worksheets. In contrast, SEPs and CCCs integration is delayed until class 3 during the Mini Lab and class 4 during the post-lab analysis, as shown in the lesson plan sequence. The materials do not support three-dimensional learning as a sustained and embedded instructional approach.
Non-Negotiable **2. PHENOMENON-BASED INSTRUCTION:** Explaining phenomenon and designing solutions drive student learning. ☐ Yes ☒ No	**Required** **2a) Observing and explaining phenomena** and designing solutions provide the purpose and opportunity for students to engage in a coherent sequence of learning a majority of the time. Phenomena provide students with authentic opportunities to ask questions and define problems, as well as purpose to incrementally build understanding through the lessons that follow.	**No**	Observing and explaining phenomena and designing solutions do not provide the purpose and opportunity for students to engage in learning, a majority of the time. Phenomena in the form of common experiences are not provided at the beginning of each lesson, and therefore do not provide students with authentic opportunities to ask questions and define problems to motivate learning about the core ideas of the unit. The materials do not incorporate anchor or investigative phenomena to provide the purpose for students to engage in the investigations and incrementally build understanding through the lessons that follow. Lessons do not include an anchoring phenomenon or driving question that threads through multiple lessons to build coherence. Each lesson operates in isolation without a clear progression from initial observations to conceptual understanding or solution design. For example, in Thermal Energy Concepts lessons, students read science

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			content on thermodynamics through a slide deck. As they progress through the slide deck, they complete various tasks, such as completing Checks for Understanding that consist of multiple-choice, recall-type questions, reading and answering questions about a hydraulic dam, and using their experiences to rank the specific heats of common materials. At the end of the lesson, during the Thermodynamics Experiment, students think of an example of a situation in which they can observe the second law of thermodynamics. Then they write and carry out a procedure to collect data from that situation to provide evidence of the second law of thermodynamics. This activity does not provide students with a phenomenon to investigate as the driver of learning and sense-making. Similarly, in both Wave Motion and Wave Characteristics Lessons, sound waves and wave properties are introduced without a guiding, observable phenomenon that encourages students to ask questions or define problems. Students explore wave behaviors, such as pitch and frequency, but without framing these concepts around a broader inquiry. In both the Chemistry Basics: Chemical Reactions and Chemistry Basics: Periodic Table lessons, instruction begins with a slide deck, vocabulary handouts, and note-taking before students encounter any meaningful phenomena. Investigations such as Alka-Seltzer tablets reacting and steel wool

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			burning are introduced after the content has been taught, which turns the investigation into a verification exercise instead of an opportunity to discover or explain something unknown. While Newton's Laws and chemical reactions are explored, students do not apply their understanding to engineer a solution or design an investigation in response to a real-world problem. Although the materials include isolated activities that involve real-world scenarios, these phenomena are not used consistently or intentionally throughout the instructional sequence to anchor learning. In Lab Challenge: Period of a Pendulum Lessons, students investigate how changing the mass of the bob and the length of the line affect the period of a pendulum; however, students are not provided with an initial phenomenon to motivate this investigation. They are provided with specific step-by-step instructions for carrying out the experiments. While they draw conclusions based on the data they collect, this is not connected to solving a problem or answering student-generated questions.
	Required **2b)** Materials are designed to provide sufficient opportunities for students to **design and engage in investigations at a level appropriate to their grade band** to explain phenomena. This includes testing theories or models, generating	**No**	Materials are not designed to provide sufficient opportunities for students to design and engage in investigations at a level appropriate to their grade band to explain phenomena. As evidenced in Indicator 2a, observing and explaining

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	data, and using reasoning and scientific ideas to provide evidence to support claims.		phenomena and designing solutions do not provide the purpose and opportunity for students to engage in learning a majority of the time; therefore, students do not have sufficient opportunities for students to design and engage in investigations at a level appropriate to their grade band to explain phenomena.
	2c) Materials provide frequent opportunities for students to **make meaningful connections** to their own knowledge and experiences as well as those of their community during sense-making about the phenomena.	**No**	Materials do not frequent opportunities for students to make meaningful connections to their own knowledge and experiences as well as those of their community, during sense-making about the phenomena. As evidenced in Indicator 2a, observing and explaining phenomena and designing solutions do not provide the purpose and opportunity for students to make meaningful connections to their own knowledge and experiences, as well as those of their community, during sense-making about the phenomena.
Non-Negotiable **3. ALIGNMENT AND ACCURACY:** Materials adequately address the Louisiana Student Standards for Science. ☐ Yes ☐ No	**Required** **3a)** The majority of the Louisiana Student Standards for Science are incorporated, to the **full depth of the standards**.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required 3b) The total amount of content is **viable** for a school year.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required **3c)** Science content is **accurate**, reflecting the most current and widely accepted explanations.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

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	3d) In any one grade or course, instructional materials spend **minimal time on content outside** of the course, grade, or grade-band.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
Non-Negotiable **4. DISCIPLINARY LITERACY:** Materials have students engage with authentic sources and incorporate speaking, reading, and writing to develop scientific literacy. ☐ Yes ☐ No	**Required *Indicator for grades 4-12 only** **4a)** Students regularly engage with **authentic sources** that represent the language and style that is used and produced by scientists; e.g., journal excerpts, authentic data, photographs, sections of lab reports, and media releases of current science research. Frequency of engagement with authentic sources should increase in higher grade levels and courses.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required **4b)** Students regularly engage in **speaking and writing** about scientific phenomena and engineering solutions using authentic science sources; e.g., authentic data, models, lab investigations, or journal excerpts. Materials address the necessity of using **scientific evidence** to support scientific ideas.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required **4c)** There is **variability** in the tasks that students are required to execute. For example, students are asked to produce solutions to problems, models of phenomena, explanations of theory development, and conclusions from investigations.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required **4d)** Materials provide a coherent sequence of learning experiences that **build scientific vocabulary** and knowledge over the course of	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

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	study. Vocabulary is addressed as needed in the materials but not taught in isolation of deeper scientific learning.		
SECTION II: ADDITIONAL CRITERIA OF SUPERIOR QUALITY			
5. LEARNING PROGRESSIONS: The materials adequately address Appendix A: Learning Progressions. They are coherent and provide natural connections to other performance expectations, including science and engineering practices, crosscutting concepts, and disciplinary core ideas; the content complements the Louisiana Student Standards for Math. ☐ Yes ☐ No	**Required** **5a)** The overall organization of the materials and the development of disciplinary core ideas, science and engineering practices, and crosscutting concepts are **coherent within and across** units. The **progression of learning** is coordinated over time, clear, and organized to prevent student misunderstanding and supports student mastery of the performance expectations.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	5b) Students **apply grade-appropriate mathematical** thinking in meaningful ways, when applicable. They are not introduced to math skills that are beyond or far below the applicable grade level expectations in the Louisiana Student Standards for Mathematics. Preferably, math connections are made explicit through clear references to the math standards, specifically in teacher materials.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
6. SCAFFOLDING AND SUPPORT: Materials provide teachers with guidance to build their own knowledge and to give all students extensive opportunities and support	**Required** **6a)** There are separate **teacher support materials** including: scientific background knowledge, support in three-dimensional learning, learning progressions, strategies for addressing diverse emerging conceptions, guidance targeting speaking and writing in the science classroom (i.e., conversation guides,	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

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to explore key concepts using multiple, varied experiences to build scientific thinking. ☐ Yes ☐ No	rubrics, exemplar student responses). Support also includes teacher guidance in the materials' **approach to phenomenon-based instruction** and provides explicit guidance on how the materials **address, build, and integrate the three dimensions**.		
	Required **6b)** Teacher resources include **educative resources** that are designed to **promote teacher learning** and support the wide range of teachers who use the materials. Unit and lesson planning resources include explicit guidance designed to ensure that students experience phenomena, design solutions, and apply scientific knowledge and skills in ways that are aligned to the Louisiana Student Standards for Science and associated learning progressions.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required **6c)** Support for **diverse learners**, including English Learners and students with disabilities, are provided. Appropriate suggestions and materials are provided for **supporting varying student needs** at the unit and lesson level using an accelerating learning approach. The language in which questions and problems are posed is not an obstacle to understanding the content, and if it is, additional supports are included (e.g., alternative teacher approaches, pacing and instructional delivery options, strategies or suggestions for supporting access to text and/or content, suggestions for modifications, suggestions for vocabulary acquisition, extension activities, etc.). Materials	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

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	include **teacher guidance to help support special populations** and provide the opportunities for these students to meet the expectations of the standards and enable regular progress monitoring.		
7. USABILITY: Materials are easily accessible, promote safety in the science classroom, and are viable for implementation given the length of a school year. ☐ Yes ☐ No	**Required** **7a)** Text sets (when applicable), laboratory, and other scientific materials are **readily accessible** through vendor packaging or certified partners.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required **7b)** Materials help students build an understanding of standard operating procedures in a science laboratory and include **safety** guidelines, procedures, and equipment. Science classroom and laboratory safety guidelines are embedded in the curriculum.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
8. ASSESSMENT: Materials offer assessment opportunities that genuinely measure progress and elicit direct, observable evidence of the degree to which students can independently demonstrate the assessed standards. ☐ Yes ☐ No	**Required** **8a) Multiple types of formative and summative assessments** (iterative student models, student-centered discussions, data analysis, self-reflection and peer feedback investigations, and projects) are embedded into unit materials and allow teachers to evaluate student progress toward demonstrating standards.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	Required **8b)** Assessment items and tasks are structured on integration of the **three dimensions** and include opportunities to engage students in applying understanding to new contexts.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

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	8c) Scoring guidelines and rubrics **align to performance expectations**, and incorporate criteria that are specific, observable, and measurable.	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.

FINAL EVALUATION
Tier 1 ratings receive a "Yes" for all Non-Negotiable Criteria and a "Yes" for each of the Additional Criteria of Superior Quality.
Tier 2 ratings receive a "Yes" for all Non-Negotiable Criteria, but at least one "No" for the Additional Criteria of Superior Quality.
Tier 3 ratings receive a "No" for at least one of the Non-Negotiable Criteria.

Compile the results for Sections I and II to make a final decision for the material under review.

Section	Criteria	Yes/No	Final Justification/Comments
I: Non-Negotiable Criteria of Superior Quality[2]	1. Three-dimensional Learning	**No**	The instructional materials are not designed so that students develop scientific content knowledge and scientific skills through interacting with the three dimensions of the science standards.
	2. Phenomenon-Based Instruction	**No**	Observing and explaining phenomena and designing solutions do not provide the purpose and opportunity for students to engage in learning a majority of the time. Materials are not designed to provide sufficient opportunities for students to design and engage in investigations at a level appropriate to their grade band to explain phenomena. Materials do not provide frequent opportunities for students to make meaningful connections to their own knowledge and experiences as well as

[2] Must score a "Yes" for all Non-Negotiable Criteria to receive a Tier 1 or Tier 2 rating.

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			those of their community during sense-making about the phenomena.
	3. Alignment and Accuracy	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	4. Disciplinary Literacy	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
II: Additional Criteria of Superior Quality[3]	5. Learning Progressions	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	6. Scaffolding and Support	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	7. Usability	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
	8. Assessment	**Not Evaluated**	This section was not evaluated because the Non-Negotiable Criteria were not met.
FINAL DECISION FOR THIS MATERIAL: **Tier 3, Not representing quality**			

[3] Must score a "Yes" for all Additional Criteria of Superior Quality to receive a Tier 1 rating.

Reviewer Information

Instructional Materials Review

Instructional materials are one of the most important tools educators use in the classroom to enhance student learning. It is critical that they fully align to state standards — what students are expected to learn and be able to do at the end of each grade level or course — and are high quality if they are to provide meaningful instructional support.

The Louisiana Department of Education is committed to ensuring that every student has access to high-quality instructional materials. In Louisiana, all districts are able to purchase instructional materials that are best for their local communities since those closest to students are best positioned to decide which instructional materials are appropriate for their district and classrooms. To support local school districts in making their own local, high-quality decisions, the Louisiana Department of Education leads online reviews of instructional materials.

Instructional materials are reviewed by a committee of Louisiana educators. Teacher Leader Advisors (TLAs) are a group of exceptional educators from across Louisiana who play an influential role in raising expectations for students and supporting the success of teachers. Teacher Leader Advisors use their robust knowledge of teaching and learning to review instructional materials.

The 2024-2025 Teacher Leader Advisors are selected from across the state and represent the following parishes and school systems: Acadia, Ascension, Avoyelles, Bienville, Bossier, Caddo, Calcasieu, CSAL, East Feliciana, East Baton Rouge, Hynes Charter School Corporation, Iberia, Iberville, Jefferson, Lafayette, Lincoln, Livingston, LSU Laboratory School, Natchitoches, Ouachita, Plaquemines, Richland, St. Charles, St. Landry, St. Mary, St. Tammany, Tangipahoa, Terrebonne, University View Academy, West Baton Rouge, and Zachary Community Schools. This review represents the work of current Louisiana educators with experience in grades 6-12.

Appendix I.

Publisher Response

The publisher had no response.

Appendix II.

Public Comments

There were no public comments submitted.